

# Chanter reed design

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This is a memo recording the measurements and methods used in the design of the chanter reeds for the school set.

The target is to get reeds working at 14" Water Gauge (WG) and to have the top g and bottom G accurate to concert pitch (A=440) within ±5c.

Initial reed setting done in my traditional G set made to Ross dimensions with a modified top hand to accommodate my fat fingers. I think that the bottom G of this set is possibly 5c flat of ideal.

## Reed #1 dimensions

Starting data		Actions
Blade length =	23	Squeeze and set to 48mm now -20c/-20c @ 14"   Clip till 22.7mm set to 46.5 now -5c/-20c.   Clip again - closer but top d has a gurgle.   Thin at tip, tone better but now -30c/-30c.   Clip to 21.4 set to 47.2mm now 0c/-8c.   Clip to 21.2 and squeeze set to 48" now ±0c at 14"WG
Blade width at tip =	10.5m	
total length =	47.8mm	
Distance from tip to chanter shoulder =	47.7	
Working pressure(WG) =	15"	
Error at top G =	-20c	
Error at bottom G =	-30c	

Final data		Comments
Blade length =	21.2	Reed now in tune but the top g seems a little pressure sensitive  Strikes @ 9"WG
Blade width at tip =	10.5	
total length =	46mm	
Distance from tip to chanter shoulder =	48mm	
Working pressure(WG) =	14"	
Error at top G =	0c	
Error at bottom G =	0c	

## Reed #2 dimensions

Starting data		Actions
Blade length =	22.5	Set at 47.5mm reed strikes at 11"wg. +75c/+50c. Quite sharp so blades scraped in the middle. Now +15c/+30c @14"WG  Some further checking needed here
Blade width at tip =	9.77	
total length =	50.5	
Distance from tip to chanter shoulder =	47.5mm	
Working pressure(WG) =	16"	
Error at top G =	+75c	
Error at bottom G =	+50c	

Final data		Comments
Blade length =	22.4	This is probably the best reed. The narrow width takes off some of the volume and the reed is quite easy to play.
Blade width at tip =	9.77	
total length =	50.4	
Distance from tip to chanter shoulder =	48mm	
Working pressure(WG) =	14"	
Error at top G =	0c	
Error at bottom G =	0c	

**Reed #3 dimensions**

Starting data		Actions
Blade length =	22	Clipped to 21mm now -30c/-35c.   Clipped to 20.6 now -10c/-15c.   Cipped to 20mm little change.   Clipped to 19.75 and set to 44.8mm now in tune
Blade width at tip =	10.5	
total length =	50mm	
Distance from tip to chanter shoulder =	45mm	
Working pressure(WG) =	14"	
Error at top G =	-60c	
Error at bottom G =	-50c	

Final data		Comments
Blade length =	19.8	I find this reed hard to control. The top g can break to an a if the c hole is vibrato'd and the top d can squeak easily.
Blade width at tip =	10.5	
total length =	48mm	
Distance from tip to chanter shoulder =	48mm	
Working pressure(WG) =	14"	
Error at top G =	0c	
Error at bottom G =	0c	

**Reed #5 dimensions**

Starting data		Actions
Blade length =	24	Initial suck tone was flatter than reed 1&2 so clipped to 21.5mm and set to 47mm -50c/-50c at 15"WG.   Clipped to 21 squeezed and set to 46mm now -15c/-15c.   Clipped to 20.7mm squeezed and set to 45mm now in tune $\pm 0c$ at 14"WG
Blade width at tip =	10.3	
total length =	51	
Distance from tip to chanter shoulder =	48mm	
Working pressure(WG) =	15"	
Error at top G =	-50c	
Error at bottom G =	-50c	

Final data		Comments
Blade length =	20.7	Reed now in tune
Blade width at tip =	10.3	
total length =	46	
Distance from tip to chanter shoulder =	45mm	
Working pressure(WG) =	14"	
Error at top G =	0c	
Error at bottom G =	0c	

**Reed #10 dimensions**

Starting data		Actions
Blade length =	22.3	Clipped to 22mm scrape to even blade opening pitch unchanged.   Clipped to 21.25 set at 49mm now -10c/-10c @ 14"WG.   Clipped to 20.75 and squeezed now in tune $\pm 0c$
Blade width at tip =	11	
total length =	49.5mm	
Distance from tip to chanter shoulder =	48mm	
Working pressure(WG) =	14"	
Error at top G =	-15c	
Error at bottom G =	-20c	

Final data		Comments
Blade length =	20.75 mm	Tip opening shape lopsided (more open one side than the other corrected by scraping. Reed quite opaque. Plays reasonably.
Blade width at tip =		
total length =	48mm	
Distance from tip to chanter shoulder =	49mm	
Working pressure(WG) =	14"	
Error at top G =	0c	
Error at bottom G =	0c	

### Comments on the setting of reeds 1,2,3,5, & 10

I made 16 reeds to a range of widths between 9.5mm and 11mm. the narrowest were very prone to cracking when the bridle was fitted and the narrowest survivor was 9.8mm (reed 2)The design is basically Ross but to MRN dimensions. Only those reeds that showed promise were worked up.